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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,196	06/27/2000	Altaf Mulla	482XY	4798

7590 08/22/2002

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EXAMINER

LEE, DIANE I

ART UNIT PAPER NUMBER

2876

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/604,196

pplicant(s)

MULLA ET AL.

Examiner

Diane I. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/29/01, 6/11/01, 7/13/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5,7,9,11
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-17 are originally presented for examination.
2. Receipt is acknowledged of the first Preliminary Amendment filed 29 January 2001 (claim 18 has been newly added); the second Preliminary Amendment filed 11 June 2001 (claims 19-34 have been newly added); and the third Preliminary Amendment filed 13 July 2001 (claims 19-34 have been canceled and claims 35-52 have been newly added). Currently, claims 1-18 and 35-52 are pending in this application.
3. Acknowledgement is made that this application is a continuation-in-part of U.S. Patent Application Serial No. 09/227,245, filed 08 January 1999 (abandoned); which is a continuation-in-part of U.S. Patent Application Serial No. 08/794,782 filed 24 September 1997, now issued as U.S. Patent 6,119,944.

Additional Remark(s)

4. Upon review of the parent applications Serial No. 09/227,245 and 08/794,782, the examiner has determined that the currently claimed invention has not been "wholly" disclosed until the current application. Specifically, "projecting a bit-mapped image during a display mode feature" in an electro-optical assembly having a reading mode and a display mode is not found in the parent application. Therefore, the effective filing date for the currently claimed invention is 27 June 2000.

Claim Objections

5. Claim 42 is objected to because of the following informalities:
 6. (a) Claim 42, lines 3-4: "a second angular distance greater than said first angular distance" should be changed to --said first angular distance is greater than said second angular distance--.
- Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. [US 6,122,023-referred as Chen].

Chen discloses a portable, handheld projecting system 50, comprising:

a display surface 54 (see figure 4);

a projector 54 within a housing for projecting an image on the display surface in a display mode of operation (see figures 4-5).

Chen does not explicitly shows the housing having a display surface.

Chen teaches the display surface is small screen (e.g., 5"x7") and that the display system is incorporated into miniature portable electronic device such as a personal digital assistances, cellular phones, pagers, or the like (see col. 2, lines 13+; col. 4, lines 49+; col. 5, lines 32+).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to recognize that the portable, handheld projecting system 50 of Chen obviously incorporate the display surface into the compact sized housing (i.e., consolidate the display surface and the projector into a housing) in order to maintain the portability.

10. Claims 1-10, 12-17, 35-38, 42, 45-547, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn et al. [US 5,600,121-referred as Kahn] in view of IEEE [Optical Raster Scanning Display Based on Surface-Micromachined Polysilicon Mirrors].

Re claims 1, 10, 12, and 14-16: Kahn discloses a portable instrument for projecting a light beam in a display mode (i.e., an aiming mode) of operation, and for selectively electro-optically reading indicia in a reading mode of operation, comprising:

- (a) a housing 10 includes a window 12 (see figure 3);
- (b) an electro-optical assembly supported by the housing, for reading the indicia during the reading mode, and for projecting the light beam on a viewing surface during the display mode (see col. 4, lines 20+; col. 5, lines 2+; and col. 6, lines 57+);
- (c) a mode selector (a triggering switch 40) for selecting one of the mode (see col. 10, lines 14+ and figure 3).

Although Kahn teaches the portable instrument projecting a light beam through a window 12 which the light beam pass on a viewing surface during the display mode for an aiming operation, he does not teach the portable instrument projecting a bit-mapped image during the display mode.

IEEE discloses a chip sized raster-scanning display system based on pairs of orthogonally scanning for projecting the bit-mapped image (pixel image) on a viewing surface during the display mode (see the figure 4).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the small sized raster-scanning display system as taught by IEEE in the portable instrument of Kahn in order to provide projecting the bit-mapped image capability during the display mode. Such modification would have provide Kahn with a the portable instrument that can scan the indicia and the project an image.

Re claim 2: Kahn teaches the housing 10 of the portable instrument having a size and a shape configured to be held in a user's hand during both the display and reading mode (see figure 2b).

Re claims 3 and 12: wherein the assembly includes a reader having a light source 16, 20 for generating a visible laser beam, a light sensor 26 having a field of view and operative for detecting light from the indicia, and a scanner for scanning at least one of the light beam and the field of view (see figure 3).

Re claims 4-6: wherein the indicia is a bar code symbol (i.e., machine-readable symbol) or other indicia, when broadly interpreted, it includes optical characters (i.e., a human-readable symbol, 2D representation) over which at least one of the light beam and the field of view is scanned, and wherein the sensor 26 is operative for capturing the indicia and generating an electrical signal corresponding to the symbol, and wherein the reader includes a signal processor 28 for processing the signal to data indicative of the symbol (see col. 9, lines 51+ and figure 3).

Re claims 7-9, 13, 17, 35-38, 42, 45-47, and 49: IEEE teaches that the raster-scanning display system includes an energizable laser for projecting a laser beam toward the target and provides a raster pattern of scanning lines that covers an area of the viewing surface, and wherein the scanner includes a first scan mirror (a fast circular mirror) for horizontal scanning (sweeping the laser beam along a first direction over the target) and a second scan mirror (a slow circular mirror) for vertical scanning (sweeping the laser beam along a second direction orthogonal to the first direction over the target). The mirrors are nearly circular so that each mirror provides angular distances wherein the first angular

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distance is greater than the second angular distance (3 cm horizontal by 2.8 cm vertical raster scan is presented) (see 1st-4th paragraphs). The IEEE states that the mechanical instability of the first mirror causes overlap scan lines and distorting the image. To over the mechanical inaccuracy, the scan pattern is controlled by selectively switching the light source on and off which obviously teaches that the raster-scanning display system includes a controlling means operatively connected to, and operative for selectively energizing the laser to generate individual light pixels at the selected position, and at a refresh rate at which pixel persist to enable the eye to steadily view the image comprises of a light pattern of the pixels on the target (see 4th paragraph). Figure 4 shows an image containing the font characters "UCD".

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the specifics of the raster scanning structure of IEEE in the portable instrument of Kahn in order to provide a stable projecting of the bit-mapped image.

11. Claims 40-41, 48, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn as modified by IEEE as applied to claim 35 above, and further in view of Chen. The teachings of Kahn as modified by IEEE and Chen have been discussed above.

Re claims 40-41, 48, 50, 52: although Kahn as modified by IEEE discloses the portable and wearable device with the laser beam is being projected on a front display (target) surface for viewing by a human, Kahn as modified by IEEE does not teach the housing having a panel with a front surface to which the swept laser beam is projected.

Chen teaches the display surface is small screen (e.g., 5"x7") and that the display system is incorporated into miniature portable electronic device such as a personal digital assistances, cellular phones, pagers, or the like (see col. 2, lines 13+; col. 4, lines 49+; col. 5, lines 32+).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to include a display panel within the housing so as to project the image whenever needed. Such modification would have provided a portable device without the display restriction

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Re claim 51: Although Kahn as modified by IEEE and Chen teach the device is a telephone and wherein the display panel is included in the housing; Kahn as modified by IEEE and Chen does not explicitly teach the display panel is a hinged to the telephone.

Due to the fact that Chen teaches the projection system having a projector with a projection screen, the projection system is provided in the housing such as a cellular phone and that the projection screen can be pliable in form so as to allow for the rolling up or storing, of display screen when not in use. This obviously teaches that the display panel/screen adapted within the cellular phone can be is attaches so the phone (i.e., the screen is bent or hinged to the telephone so as to easily store the display when it is not in used).

12. Claims 11, 39, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn as modified by IEEE as applied to claim 1 above, and further in view of Plesko [US 5,506,394]. The teachings of Kahn as modified by IEEE have been discussed above.

Re claims 11 and 39: Although Kahn as modified by IEEE teaches the housing having a window located at one of the end regions and the bit-mapped image is projected through the window, Kahn as modified by IEEE does not teach the housing is elongated and extending along an axis between opposed end regions.

Plesko discloses a stylus beam scanning device for utilizing as a bar code scanning device (see the abstract). The indicia reader/scanner housing having a size and shape configured to be held in a user's hand during reading mode (see figure 1). Plesko shows the scanner having a light source (i.e., a laser for generating and directing the light beam as a visible laser beam along an optical path), and a manually actuatable trigger 2 (see figures 1-5). When scanning the indicia, the light transmissive element of the housing faces the indicia and the light directed by the laser light source passes in one direction through the element and the reflected light passes in an opposite direction through the element to be detected by

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the light sensor having a field of view (see figures 7-8), and for generating an electrical signal indicative of the detected light (see col. 17, lines 9+). The front end 16A of the scanner where the light enters and exits a window 6, 7 (see figure 7). The housing is elongated and extending along an axis between opposed end regions, the window is located at one of the end regions the light is projected through the window (see figures 1-7). The reader comprising a detector 14 for detecting the light reflected off the coded indicia and generating an electrical signal indicative of the detected light intensity (see col. 17, lines 9+). Plesko further discloses the reader having a processor 35 for decoding the electrical signal into data represented by the coded indicia, a memory for storing the data within the housing (see col. 16, lines 9-16; col. 18, lines 1-8), a scanning module 100 as a drive supported by the housing for scanning the emitted laser light beam across the target (see col. 16, lines 27+ and figure 8). Plesko further discloses that the stylus beam scanning device can be utilized as a laser pointer (see col. 18, lines 14). The scan module drive for moving the laser light beam along a path outwardly of the housing towards the target and producing a beam pattern (e.g., a spot, a line, or an elliptical scan pattern) on the target when in a pointing mode in which a visual display is created on the target (see col. 18, lines 14+).

In view of Plesko's teachings, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide an elongated housing in the portable instrument of Kahn as modified by IEEE to in order to provide a stylus shaped housing that is easily held by the user and to increase a comfort level when operating the instrument.

Re claims 44: Kahn as modified by IEEE does not teach the scanner and the controller are mounted on a common support to constitute a module.

Plesko discloses the scanning device having a monolithic blocklike chassis that includes the scanner and the controller mounted on a common support to constitute a compact scan module (see figures 5-6).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the scan engine module that can be conveniently incorporated in the housing in the housing structure of Kahn as modified by IEEE in order to provide a compact hand held device.

13. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn as modified by IEEE and Plesko as applied to claim 35 above, and further in view of Kiang [Journal of Microelectromechanical System]. The teachings of Kahn as modified by IEEE and Plasko have been discussed above.

Kahn as modified by IEEE teaches the controller controlling the timing rate as to when the energized and de-energize the laser to display the image as font characters.

Plesko discloses the reader having a processor 35 for decoding the electrical signal into data represented by the coded indicia, a memory connected to the processor for storing the data within the housing for process thereafter such as downloading the store data later, transmitted to the host, and etc. (see col. 16, lines 9-16; col. 18, lines 1-8).

Kahn as modified by IEEE and Plasko does not teach the memory having stored fonts and timing rate data as to when the energized and de-energize the laser to display the image as font characters.

Kiang teaches the system reading the bar code, decoding the code (detecting the bar code signal as a function of the time), recoding the detected signal, and reconstructing the bar code by displaying (see page 32 in system design consideration, page 33 in application of bar code reader, figures 10- 13).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to apply the system application taught by Kiang in the system of Kahn as modified by IEEE and Plesko to store the image data and projecting the image stored for a visual display.

Double Patenting

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

15. Claims 1-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-34 of U.S. Patent No. 6,119,944 in view of Kahn, IEEE, and Plesko. The teachings of Kahn, IEEE, and Plesko have been discussed above.

Applicant's claimed limitation is found in the Patent'944 except for the device having a mode switch for selecting a display mode which the device projecting the bit-mapped image during the display mode. Kahn, IEEE, Plesko, Chen teaches the device projecting an image during the display.

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Kahn, IEEE, Plesko, and Chen in the system of Patent'944 in order to provide displaying feature combined with reading capability.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brown et al. [US 5,032,924], Kian [IEEE 1997, Transducer], and Hagelin [IEEE Journal, Vol. 4, No. 1] discloses a raster scanning display system; and

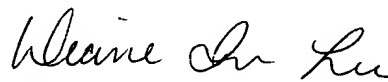
Koga [JP 60-105,003] Boie et al. [US 5,337,353] teaches the bar code scanner consolidated with a telephone.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diane I. Lee whose telephone number is 703-306-3427. The examiner can normally be reached on Monday through Friday from 6:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 703-305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Diane I. Lee
Primary Examiner
Art Unit 2876

August 19, 2002